

What is claimed is:

5

1. A progressive addition lens, comprising a normalized lens distortion of less than about 300.
- 10 2. The lens of claim 1, further comprising at least one surface that is a composite of a progressive surface and a regressive surface.
- 15 3. The lens of claim 2, wherein the composite surface exhibits a maximum, localized unwanted astigmatism that is less than about 0.125 diopters, than the sum of an absolute value of the maximum, localized astigmatism of each of the progressive and regressive surfaces.
- 20 4. The lens of claim 2 or 3, further comprising a second progressive addition surface.
5. The lens of claim 2 or 3, further comprising a second surface that is a regressive surface.
- 25 6. A progressive addition surface, comprising a composite surface of a progressive surface and a regressive surface, wherein the composite surface exhibits a maximum, localized unwanted astigmatism that is at least less than about 0.125 diopters than the sum of an absolute value of the maximum, localized astigmatism of each of the progressive and regressive surfaces.
- 30 7. A method for designing a progressive addition surface comprising the steps of: a.) designing a progressive surface comprising at least one first area of unwanted

astigmatism; b.) designing a regressive surface comprising at least one second area of unwanted astigmatism; and c.) combining the progressive and regressive surface

5 designs to form a composite progressive surface design, wherein the at least one first and second areas of unwanted astigmatism are substantially aligned.

8. The method of claim 7, wherein each of the progressive and regressive surface designs is one of a hard design, a soft design, or a combination thereof.

10

9. The method of claim 7, wherein each of the progressive and regressive surface designs are hard designs.

15

10. The method of claim 7, wherein each of the progressive and regressive surface designs are soft designs.

20

11. The method of claim 7, wherein a surface formed from the composite surface design exhibits maximum, localized unwanted astigmatism that is less than about 0.125 diopters than the sum of an absolute value of the maximum, localized unwanted astigmatism of each of the progressive and regressive surfaces.

25

12. The method of claim 7, wherein the composite surface design comprises more than one area of maximum, localized unwanted astigmatism on each side of the composite surface's channel.

13.

13. The method of claim 5, wherein the progressive and regressive surface designs are expressed as sag departures from a base curvature.

30

14. The method of claim 13, wherein the base curvature is a concave curvature or a convex curvature.

15. The method of claim 7, wherein step c.) is carried out by summing the progressive surface and regressive surface design sag values according to the following equation:

5

$$Z(x, y) = \sum a_i Z_i(x, y) \quad (I)$$

wherein  $Z$  is the composite surface sag value departure from a base curvature at point  $(x, y)$ ,  $Z_i$  is the sag departure for the  $i$ th surface to be combined at point  $(x, y)$

10 and  $a_i$  are coefficients.